

NEW BRITISH LICHENS.

By DR. J. STIRTON.

Lecidea emphysa. *Strn.*—Thallus albus vel albidus tenuis continuus; apothecia parva adnata sanguineo-atra, convexa immarginata, intus omnino aurantiacea; sporæ 8næ incolores obovatae 1-septatae, $\cdot 01\text{-}\cdot 014 \times \cdot 004\text{-}\cdot 0045$ m.m.; paraphyses valde indistinctæ et irregulares; hypothecium durantiacum. Gelatina hymenialis iodo vinose rubens.

Supra ligna putrida prope Dalwhinnie.

Thallus white, thin; apothecia small, convex, sanguineous-black, orange within; spores 8 colourless, obovate, 1-septate small; paraphyses very indistinct; hypothecium orange. Gel. hym., wine-red with iodine.

Lecidea subvernalis. *Strn.*—Thallus albus tanquam hypophœodes tenuissimus; apothecia parva flavida dein livida demum fusco-nigra, convexa immarginata, intus pellucida vel cœrulee pellucida; sporæ 8næ incolores simplices oblongæ, $\cdot 012\text{-}\cdot 02 \times \cdot 0055\text{-}\cdot 006$ m.m.; paraphyses haud distinctæ conglutinatae; hypothecium incolor. Gelatina hymenialis iodo cœrulescens dein violacea vel vinose violacea.

Ad lignum vetustum vel putridum prope Grantown.

Thallus white, thin, gonidia entangled amongst the woody fibres; apothecia pale yellow, then bluish black, ultimately fusconigricant, small and convex, pellucid within; spores 8, colourless, simple, oblong, moderate; paraphyses conglutinate; hypothecium colourless. Gel. hym., cœrulescent, then violaceous or vinoso-violaceous with iodine.

The habitat as well as other differences appear to warrant a separation of this lichen from *L. vernalis* (Ach.), although, it must be confessed, the variable condition of the latter may extend to this and even include it.

Lecidea sporadiza. *Strn.*—Thallus flavidus granulosus vel granuloso-verrucosus, granulis nonnihil pulverulentis (K flavens dein, C addito, aurantiaco-rubens); apothecia nigra, sessilia parva, vel mediocria plana rugosa, marginata, intus cinerascens; sporæ 8næ, incolores, simplices, ellipsoideæ, $\cdot 006\text{-}\cdot 007 \times \cdot 004\text{-}\cdot 0045$ m.m.; paraphyses irregulares parvæ, indistinctæ; hypothecium incolor. Gel. hym., iodo non tincta.

Ad lignum vetustum cæsum prope Grantown.

Thallus yellow or greenish yellow, granulose, granules often conglomerate and pulverulent (K yellow, C orange red); apothecia black sessile, small or moderate, plane rugose, margined, cinerascens within; spores 8, colourless, simple, elliptical, small; paraphyses, indistinct, not numerous; hypothecium colourless. Gel. hym., not tinted by iodine.

Allied to *L. neglecta* (Nyl.).

Lecidea pammita. *Strn.*—Thallus (K e flavo ferrugineo-rubens), albidus vel cinereo-albidus crassus, areolate-diffractus, areolis laevibus minute papillois; apothecia nigra adnata plana vel convexiuscula, margine undulato interdum pallidiore cincta, epithecio sæpissime gyroso-plicato, intus pallida; sporæ 8næ, incolores simplices ellipsoideæ, $\cdot 008\text{-}01 \times \cdot 005\text{-}006$ m.m.; paraphyses crassæ irregulares indistinctæ apicibus clavatis nigricantibus; hypothecium incolor. Gel. hym., iodo cœrulescens dein violascens.

Ad saxa, Ben Arthur.

Thallus (K yellow, then orange red) whitish or cinereo-albescent, thick, areolato-diffract, areolæ smooth, minutely papillose; apothecia black, sessile plane, or somewhat convex with an undulated, at times paler margin, pale within; epithecium almost constantly gyroso-plicate; spores 8, colourless, simple elliptical, rather small; paraphyses thick, not distinct with clavate nigricant apices; hypothecium colourless. Hymeneal gelatine blue, then violet with iodine.

This lichen partakes of the characters of *L. mollis* (Whlnb.) and *L. tessellata* (Flk.).

Lecidea scutulata. *Strn.*—Thallus (K—C—) pallide cervinus vel pallide infescens tenuisculus diffracto-areolatus, areolis planis vel nonnihil convexis; apothecia mediocria vel majuscula fusconigra vel nigra innata vel interdum paulo emersa, tenuiter marginata, epithecium concavo; sporæ 8næ, simplices incolores ellipsoideæ, $\cdot 024\text{-}032 \times \cdot 012\text{-}015$ m.m.; paraphyses crebræ graciles apicibus fuscercantibus; hypothecium crassum fusconigrum. Gel. hym. iodo cœrulescens dein pars media vinose fulvercens, apicibus persistenter cœrulee tinctis.

Ad saxa apud, Ben Lawers.

Thallus (K—C—) pale cervino-rufescent thinnish diffracto-areolate, areolæ, somewhat convex; apothecia rather large, fusconigricant or black, innate, or a little elevated, thinly marginate; epithecium concave; spores 8, simple, colourless, elliptical, large; paraphyses numerous filiform, apices, fuscescens; hypothecium thick, fusco-nigrum. Gel. hym. cœrulescent, then the middle of the hymenium vinoso-fulvescent, the upper extremity remaining cœrulescent with iodine.

This is closely allied to *L. pansæola* (Ach.), but the reactions are constantly as indicated above. None of the reddish cephalodia, usually present on the latter, have been seen on any of the specimens.

Lecidea callista. *Strn.*—Thallus fusco-niger granulosus granuliæ dispersis vel conglomeratis; apothecia conferta sæpissime contigua parva nigra adnata cæsio-pruinosa, margine prominulo inflexo cincta; sporæ 8næ simplices incolores elongato-ellipsoideæ vel cylindraceæ, $\cdot 012\text{-}014 \times \cdot 003$ m.m., forsan non bene evolutæ;

paraphyses crassinsculæ satis bene distinctæ pellucidæ, apicibus fusces centibus clavatis granuloso-inspersis; hypothecium tenue fusco-nigrum. Gel. hym. iodo intense, cœrulescens fere nigra.

Ad Saxa granitica prope Grantown.

Thallus brownish black granulose, granules either dispersed or conglomerate; apothecia closely set, very frequently contiguous, small black sessile cæsio-pruinose with a prominent inflexed margin; spores 8, simple colourless, almost cylindrical small, perhaps not matured; paraphyses thickish, not very distinct pellucid with brownish clavate apices; hypothecium thin nigro-fuscous. Gel. hym. intensely blue, almost black with iodine.

Lecidea lyperiza. *Strn.*—Thallus cinerascens vel plumbeo-cinerascens tenuis levis continuus (K—C—) obscure limitatus; apothecia adnata nigra plana vel nonnihil convexa, obtuse marginata, mediocria vel majuscula, intus cinerascens; sporæ 8næ fuscae ellipsoidæ 1-septatæ et sæpissime nucleatæ, $\cdot 016\text{-}\cdot 022 \times \cdot 009\text{-}\cdot 012$ m.m.; paraphyses graciles nonnihil irregulares granuloso-inspersæ, apicibus bis tervis ramosis et interdum articulatis; hypothecium fuscescens gramosum. Gel. hym. iodo intense cœrulescens fere nigra.

Ad corticem lævem prope Killin.

Thallus cinerascens or bluish-cinerascens, thin, smooth, continuous (K—C—), obscurely limited; apothecia sessile, black, plane or somewhat convex, rather large, bluntly margined, cinerascens within; spores 8, fuscous ellipsoid, 1-septate, and very often with 3 or 4 nucleæ, rather large; paraphyses distinct, filiform, with numerous granules interspersed, apices twice or even thrice divided and often articulated; hypothecium fuscescens grumous. Gel. hym. intensely blue, almost black with iodine.

Xylographa scaphoidea. *Strn.*—Thallus macula alba vel obsoleta indicatus; apothecia prominula fusca oblonga, rotundata vel flexuosa, parva, epithecio rimiformi, margine prominulo crasso; sporæ 8næ, incolores simplices ellipsoideæ, $\cdot 012\text{-}\cdot 016 \times \cdot 006\text{-}\cdot 008$ m.m.; paraphyses irregularis, indistinctæ, apicibus fuscis conglutinatis; hypothecium incolor. Gel. hym. iodo obsoleto cœrulescens dein fulvescens.

Ad alnum decorticatam prope Dalwhinnie et Grantown.

Thallus indicated by a white spot, often almost obsolete; apothecia prominent, fuscous, oblong, roundish or even flexuose, small, epithecium rimiform, with a prominent round border; spores 8, colourless, simple, ellipsoid, moderate; paraphyses not distinct; hypothecium colourless. Gel. hym. obsoletely cœrulescent, then fulvescent with iodine.

The gonidia interspersed amongst the fibres of the wood are large, green, $\cdot 012\text{-}\cdot 018$ m.m. in diameter.

Opegrapha contexta. *Strn.*—Thallus rufo-cervinus tenuis fusco-

limitatus; apothecia nigra parva plerumque aggregata fere lecideiformia, epithecii rimiformibus, in acervulis (latit. circa. 2 m.m.), appositis gyroso-plicatis, intus cinereo-fusca; sporæ 8næ, incolores fusiformes (apicibus obtusis), 3-septatæ, $\cdot 017\text{-}\cdot 025 \times \cdot 0045$ m.m.; paraphyses valde indistinctæ, hypothecium fusco-nigrum. Pars inferior hymenii iodo cœrulescens dein omnino vinose rubens.

Ad corticem Ulni prope Grantown.

Thallus reddish, buff-coloured, thin, hypothallus brown; apothecia black, small, for the most part aggregate, almost patelliform; epithecia rimiform arranged, parallel or contorted manner in the aggregations, cinereo-fuscous within; spores 8, colourless fusiform with blunt apices, 3-septate moderate; paraphyses very indistinct; hypothecium nigro-fuscous. The lower half of the hymenium at first only cœrulescent with iodine, then the whole wine red.

This lichen bears a certain affinity to the Arthonia, but the epithecium is rimiform, and in a small proportion of cases single apothecia are seen somewhat elongated.

Opegrapha prosiliensis. *Strn.*—Thallus albus vel albidus tenuissimus chrysogonidiens; apothecia prominula nigra ovata vel oblonga, epithecio rimiformi marginibus prominulis rotundatis; sporæ 8næ incolores fusiformi-ellipsoideæ, 3-septatæ et 4-nucleatæ, halone cinctæ, $\cdot 02\text{-}\cdot 028 \times \cdot 006\text{-}\cdot 007$ m.m.; paraphyses satis bene distinctæ irregulares ramosæ, apicibus fusciscentibus; hypothecium fuscum. Gel. hym. iodo vinose rubens cœrulescentia præcedenti fere obsoleta.

Ad arbores decorticatas et emortuas prope Grantown.

The gonidia are large and thickly entangled amongst the fibres of the wood. Scattered here and there over the thallus are seen pretty large nearly spherical Verrucæ (latit. as much as $\cdot 25$ m.m.), containing spermatia ($\cdot 0045\text{-}\cdot 006 \times \cdot 0015$ mm.). On short, simple sterigmata. Thallus white or albicant, very thin, with orange-coloured gonidia; apothecia prominent, black, ovate, or oblong, epithecium rimiform, with prominent rounded margins; spores 8, colourless fusiform-ellipsoid, 3-septate and very generally 4-nucleate, surrounded by a gelatinous halo, rather large; paraphyses pretty distinct, branching with brownish apices; hypothecium fuscous. Gel. hym. wine-red with iodine.

Verrucaria aphorisasa. *Strn.*—Thallus maculis segregatis fusconigris determinatis indicatus; apothecia nigra, compluribus in quavis maculæ aggregatis, fere innata et hemisphærica, perithecio dimidiato; sporæ (4-8) næ, incolores demum fusæ, oblongæ, 1-septatæ, $\cdot 02\text{-}\cdot 028 \times \cdot 005\text{-}\cdot 007$ m.m.; paraphyses numerosæ, divaricato-ramosæ, nonnihil indistinctæ. Gel. hym., iodo levitate cœrulee vel violacee tineta.

Ad corticem Ulni prope Grantown.

Thallus indicated by brownish black detached well defined spots; apothecia black almost innate and hemispherical, many being closely congregated in each spot, epithecium dimidiate; spores 4 to 8 colourless, at length brown oblong, 1-septate rather large; paraphyses numerous, branching not very distinct. Gel. hym. tinted blue or violet, with iodine.

Verrucaria peltophora. *Strn.*—Thallus squamulosus, squamulis tenuibus viridibus lævibus appositis vel sejunctis margine recurvis; apothecia nigra mediocria vel majuscula prominula hemisphærica, perithecio dimidiato; sporæ 8næ, fuscæ, ellipsoideæ muralidivisæ, $\cdot 035\text{--}\cdot 048 \times \cdot 02\text{--}\cdot 03$ m.m.; paraphyses parvæ graciles, guttalis oleosis inspersæ, filamentis osteolaris numerosis. Gel. hym. iodo vinose rubens.

Supra terram apud, Ben Lawers.

Thallus squamulose, squamules thin green, smooth, either approximated or scattered; apothecia black, large, prominent perithecium dimidiati; spores 8, fuscous elliptical, muralilocular, rather large; paraphyses few, filiform, interspersed with oily globules, osteolar filaments numerous. Gel. hym. wine red with iodine.

Verrucaria colleta. *Strn.*—Thallus niger tenuis continuus; apothecia nigra parva, latit. ($\cdot 1\text{--}\cdot 2$ m.m.), sphærica interdum fere aggregata, perithecio integro, epithecio poriformii; sporæ, 8næ, incolores fusiformes constrictæ, 1-septatæ interdum curvulæ, $\cdot 032\text{--}\cdot 045 \times \cdot 01\text{--}\cdot 013$ m.m.; paraphyses valde indistinctæ fere conglutinatæ. Gel. hym. intra thecas iodo vinose rubens.

Supra Gymnomitrium concinnatum apud, Ben Lawers.

Gonidia are seen interspersed, having, in many instances, a diameter from $\cdot 016$ to $\cdot 02$ m.m., but it is questionable whether they belong to the thallus of this lichen.

Thallus black, thin, continuous; apothecia black, small, diameter from $\cdot 1$ to $\cdot 2$ m.m., sphærical, at times almost aggregate, perithecium entire; spores 8, colourless, fusiform, often constricted at the middle, 1-septate, large; paraphyses very indistinct. Gel. hym. within the asci, wine-red with iodine, the rest untinted.

Lecideia alpicola. *Schær.* Ben Lawers.—Mr. Leighton adduces this lichen, in his "Lichen Flora," as having been gathered by Mr. Crombie on Ben Nevis, but as the latter omits it in his "Lich. Brit.," and inserts in its place, *L. galbula*, there is evidently some mistake. Mr. Leighton, besides, speaks of the spores as colourless; now it is only at an early stage they are so; when mature, they are of a beautiful green colour, merging ultimately to brown.